FIG. 1

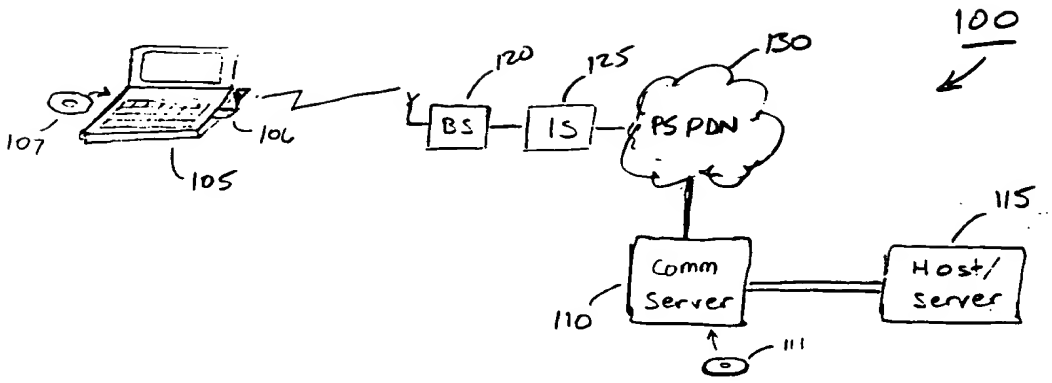

100
107
106
105
120
BS
125
IS
130
PS PDN
115
Comm Server
Host/ Server
110
111

FIG. 2

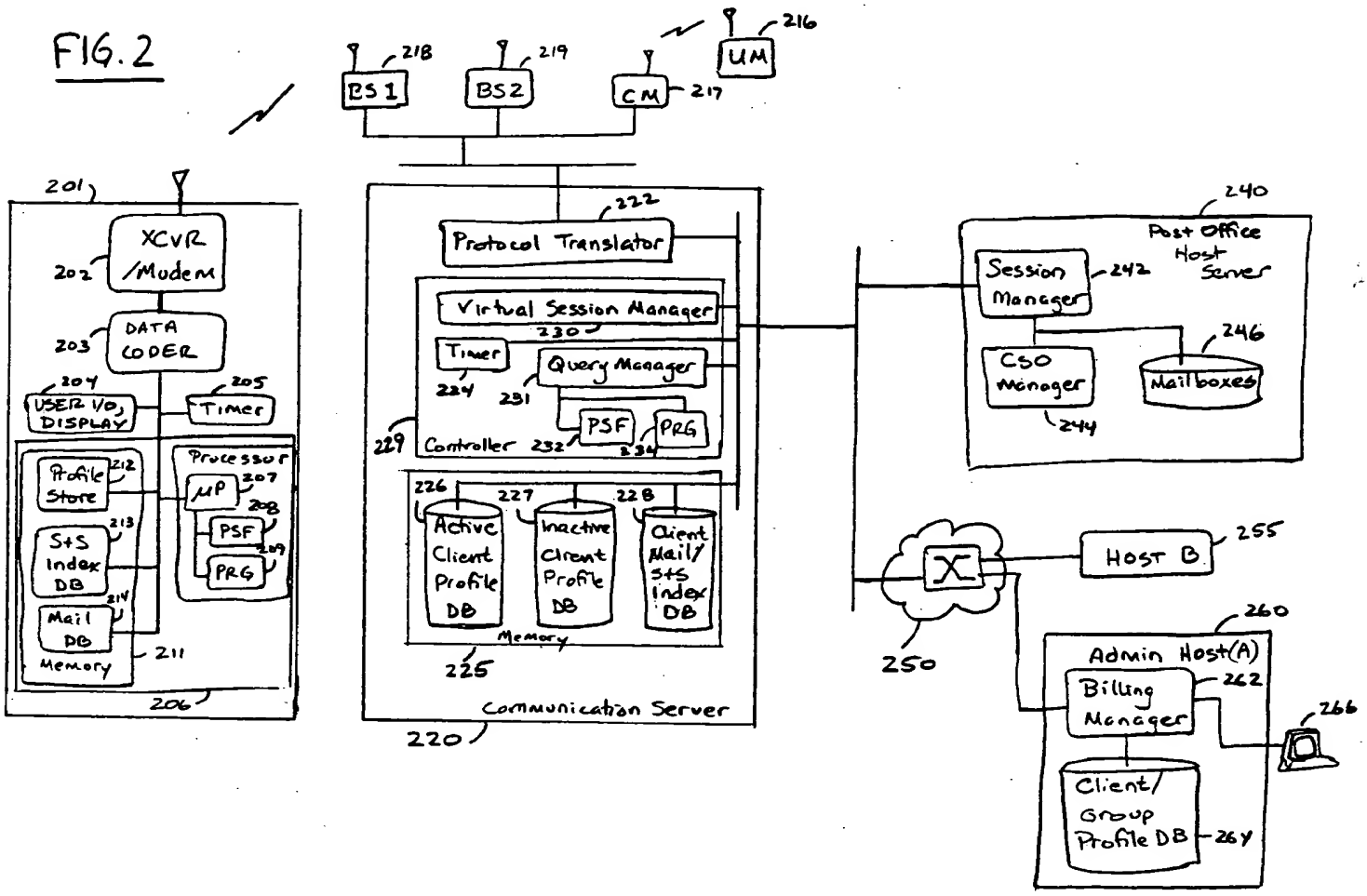

216
UM
218
BS1
219
BS2
CM
217
201
XCVR /Modem
202
DATA CODER
203
204
USER I/O, DISPLAY
205
Timer
Profile Store
212
Processor
μP
207
208
PSF
209
PRG
S+S Index DB
213
Mail DB
214
Memory
211
206
222
Protocol Translator
Virtual Session Manager
230
Timer
224
Query Manager
231
PSF
PRG
234
229
Controller
232
226
227
228
Active Client Profile DB
Inactive Client Profile DB
Client Mail/ S+S Index DB
Memory
225
Communication Server
220
240
Post Office Host Server
Session Manager
242
CSO Manager
244
246
Mailboxes
X
250
HOST B
255
260
Admin Host(A)
Billing Manager
262
266
Client/ Group Profile DB
264

FIG. 3

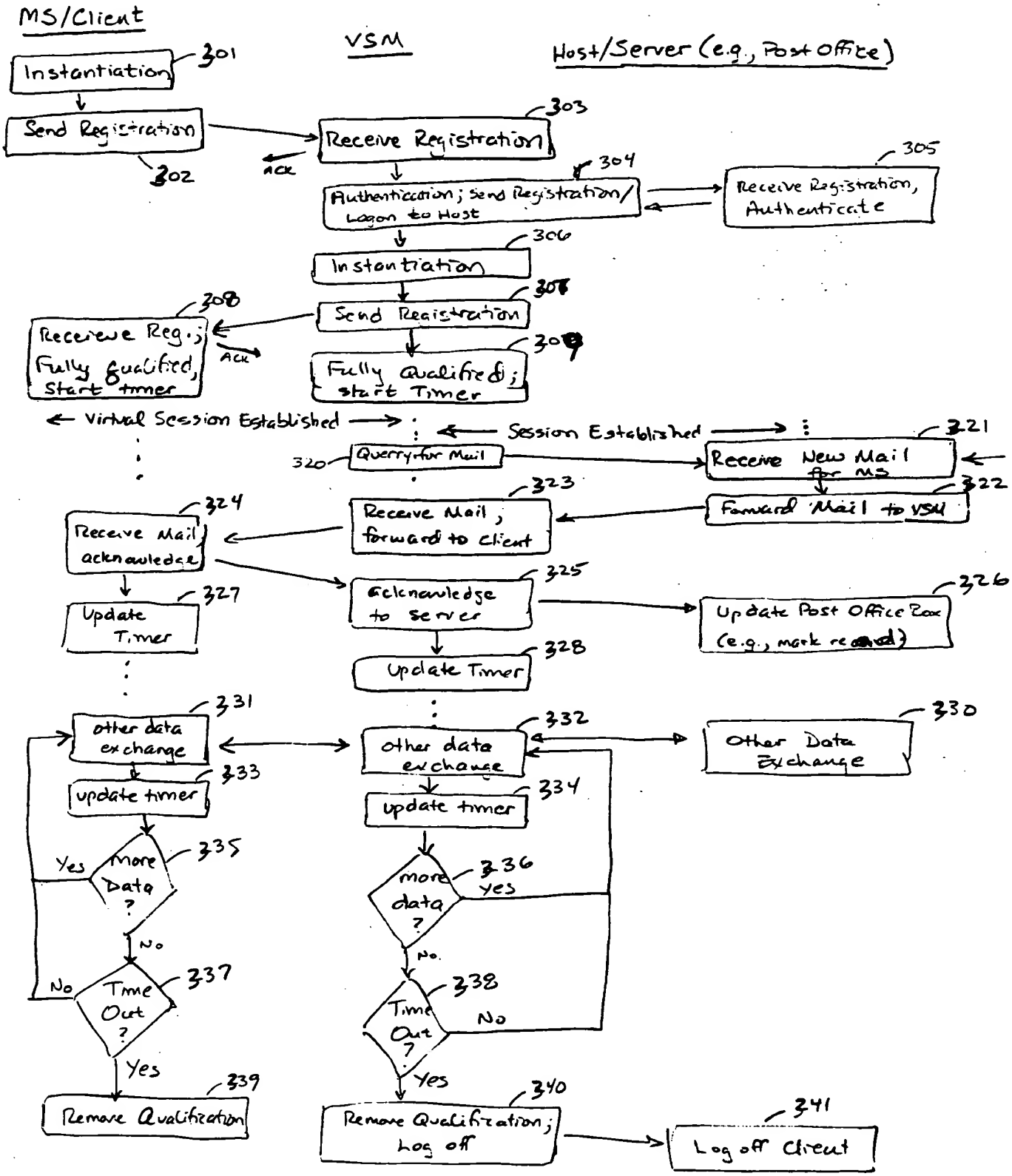

MS/Client
VSM
Host/Server (e.g., Post Office)
Instantiation
301
Send Registration
302
ACK
Receive Registration
303
Authentication; Send Registration/ Logon to Host
304
Receive Registration, Authenticate
305
Instantiation
306
Send Registration
307
Receive Reg.; Fully Qualified, Start timer
308
ACK
Fully Qualified; Start Timer
309
Virtual Session Established
Session Established
Querry for Mail
320
Receive New Mail for MS
321
Forward Mail to VSM
322
Receive Mail; forward to Client
323
Receive Mail acknowledge
324
Acknowledge to server
325
Update Post Office Box (e.g., mark read)
326
Update Timer
327
Update Timer
328
other data exchange
331
other data exchange
332
Other Data Exchange
330
update timer
333
update timer
334
more Data ?
335
Yes
No
more data ?
336
yes
No
Time Out ?
337
No
Yes
Time Out ?
338
No
Yes
Remove Qualification
339
Remove Qualification; Log off
340
Log off Client
341

Fig. 4

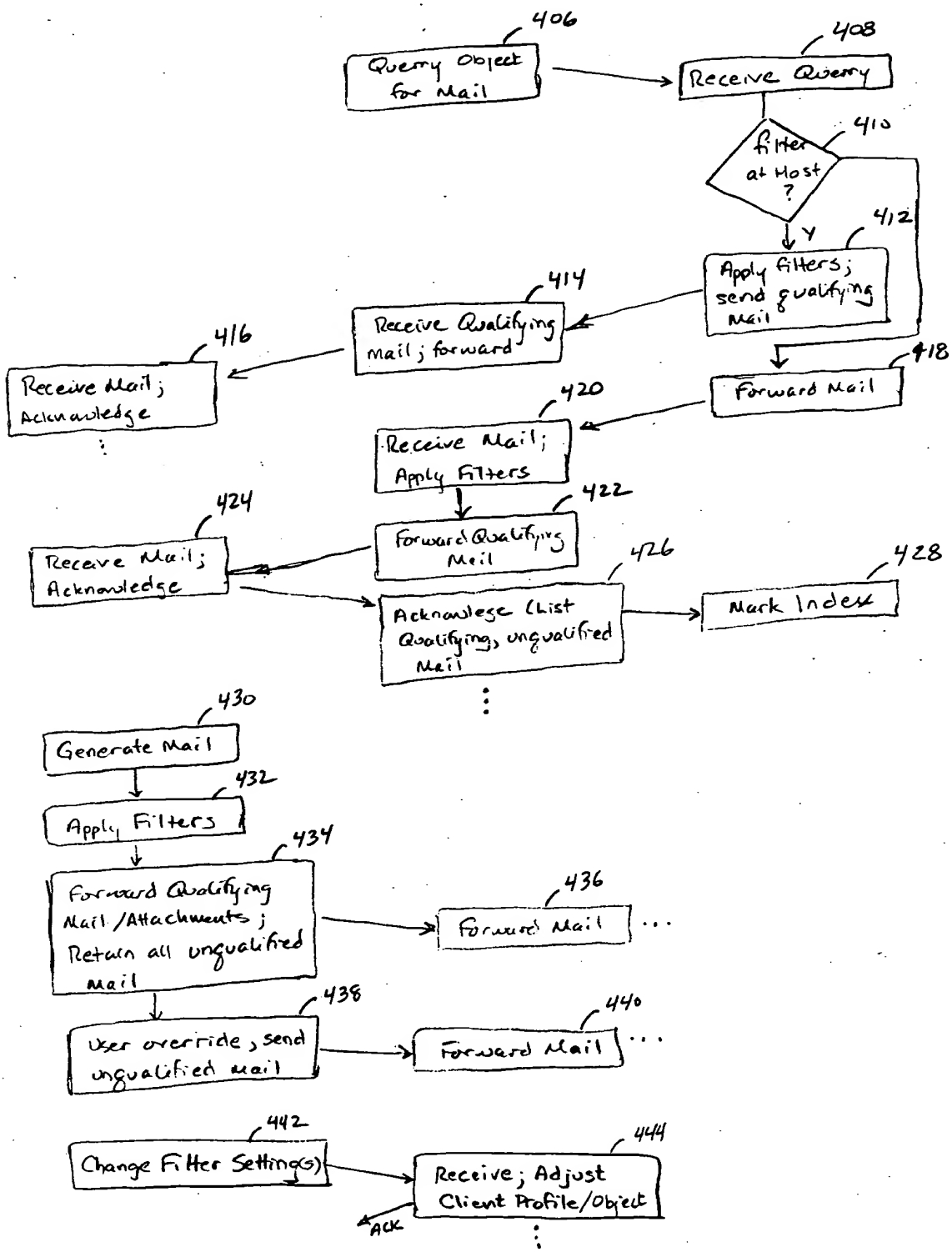

Ms/Client
Comm Server
Host/Server
406
Query Object for Mail
408
Receive Query
410
filter at Host ?
Y
412
Apply filters; send qualifying Mail
414
Receive Qualifying mail; forward
416
Receive Mail; Acknowledge
418
Forward Mail
420
Receive Mail; Apply Filters
422
Forward Qualifying Mail
424
Receive Mail; Acknowledge
426
Acknowlege (List Qualifying, unqualified Mail
428
Mark Index
430
Generate Mail
432
Apply Filters
434
Forward Qualifying Mail/Attachments; Return all unqualified Mail
436
Forward Mail
438
User override, send unqualified mail
440
Forward Mail
442
Change Filter Setting(s)
444
Receive; Adjust Client Profile/Object
ACK

FIG. 5

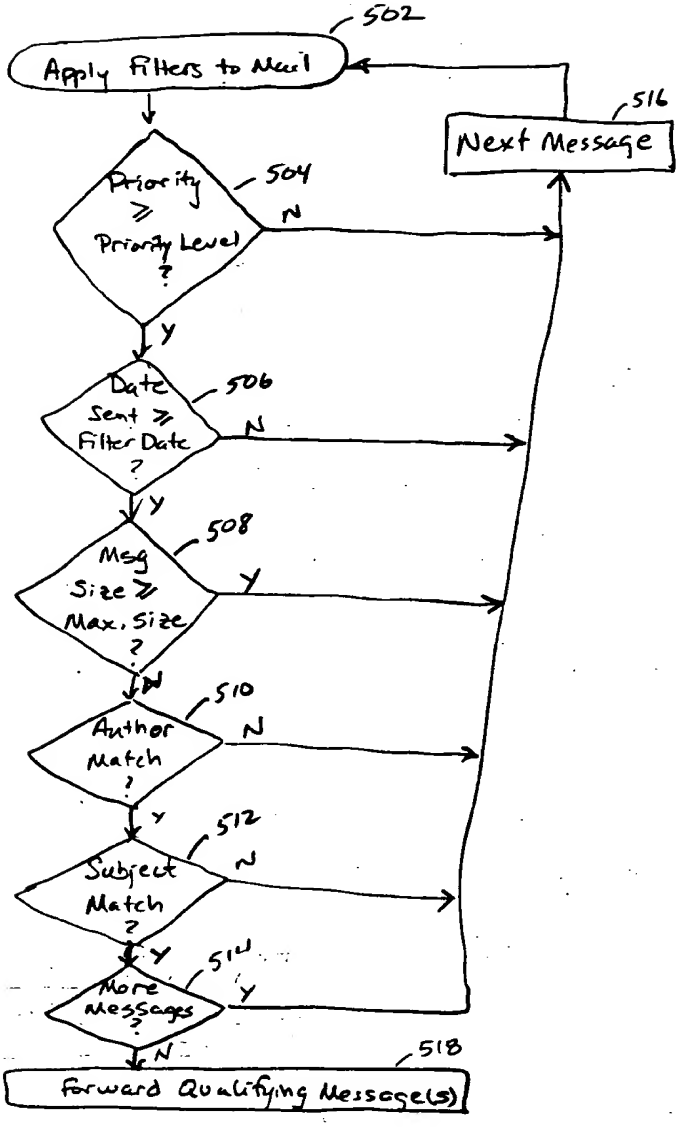

502
Apply Filters to Mail
516
Next Message
Priority ≥ Priority Level ?
504
N
Y
Date Sent ≥ Filter Date ?
506
N
Y
Msg Size ≥ Max. Size ?
508
Y
N
Author Match ?
510
N
Y
Subject Match ?
512
N
Y
More Messages ?
514
Y
N
518
Forward Qualifying Message(s)

FIG. 6

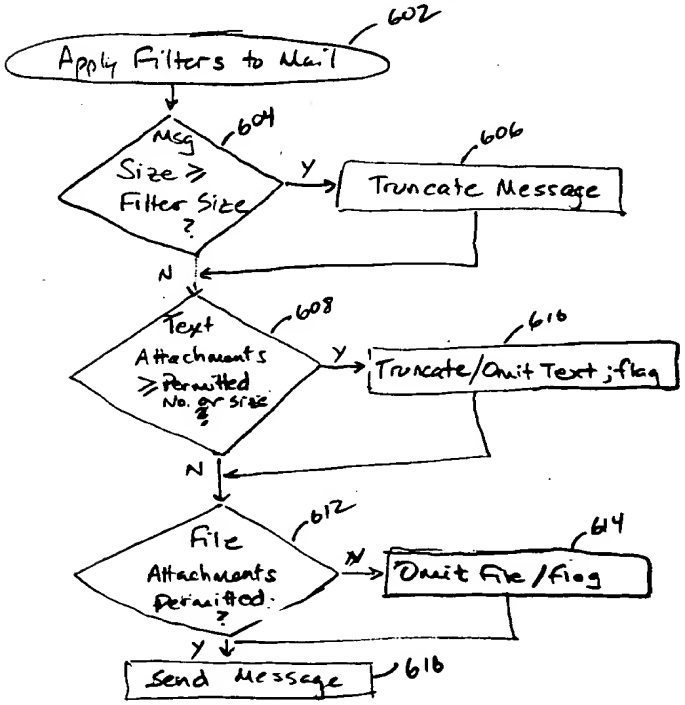

602
Apply Filters to Mail
Msg Size ≥ Filter Size ?
604
Y
606
Truncate Message
N
Text Attachments ≥ Permitted No. or Size ?
608
Y
610
Truncate/Omit Text; flag
N
File Attachments Permitted ?
612
N
614
Omit File/flag
Y
Send Message
616

FIG. 7

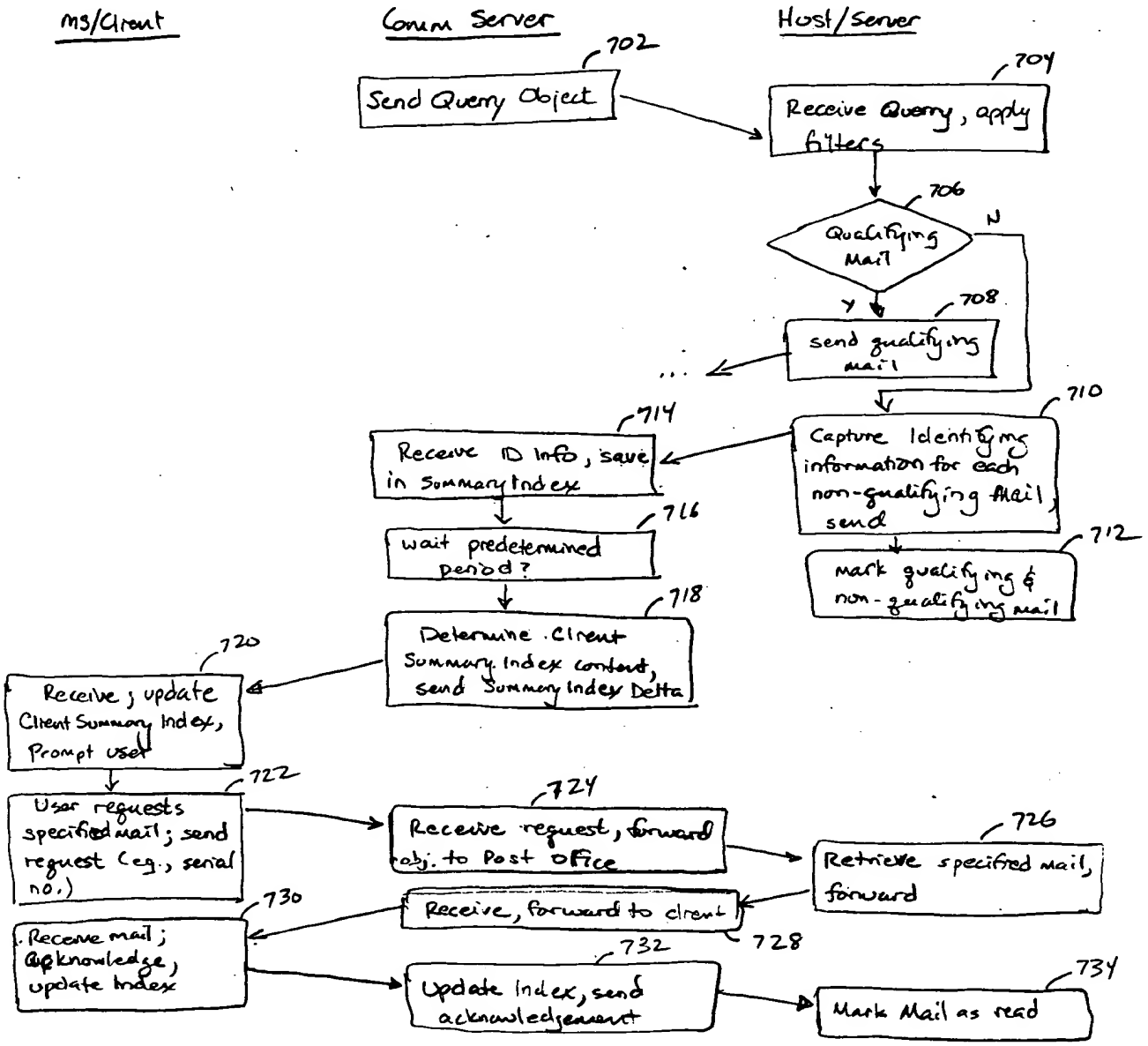

MS/Client
Comm Server
Host/Server
702
Send Query Object
704
Receive Query, apply filters
706
Qualifying Mail
N
Y
708
send qualifying mail
...
710
Capture identifying information for each non-qualifying mail, send
712
mark qualifying & non-qualifying mail
714
Receive ID info, save in Summary Index
716
wait predetermined period?
718
Determine Client Summary Index content, send Summary Index Delta
720
Receive; update Client Summary Index, Prompt user
722
User requests specified mail; send request (eg., serial no.)
724
Receive request, forward obj. to Post Office
726
Retrieve specified mail, forward
728
Receive, forward to client
730
Receive mail; acknowledge, update Index
732
Update Index, send acknowledgement
734
Mark Mail as read

FIG. 8

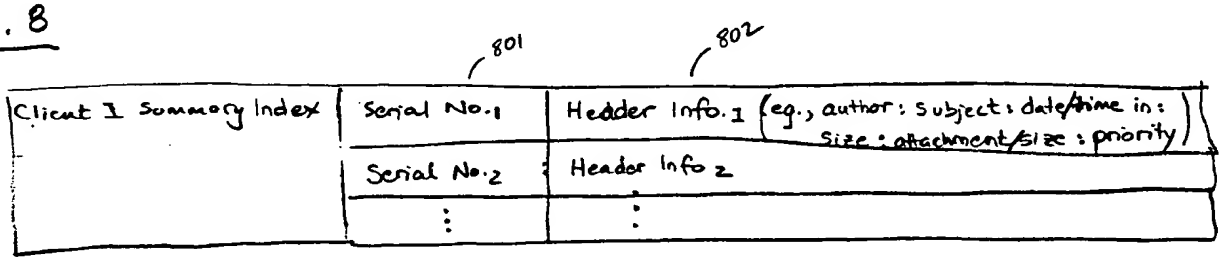

801
802
Client 1 Summary Index
Serial No.1
Header Info.1 (eg., author; subject; date/time in; size; attachment/size; priority)
Serial No.2
Header Info 2

FIG. 9

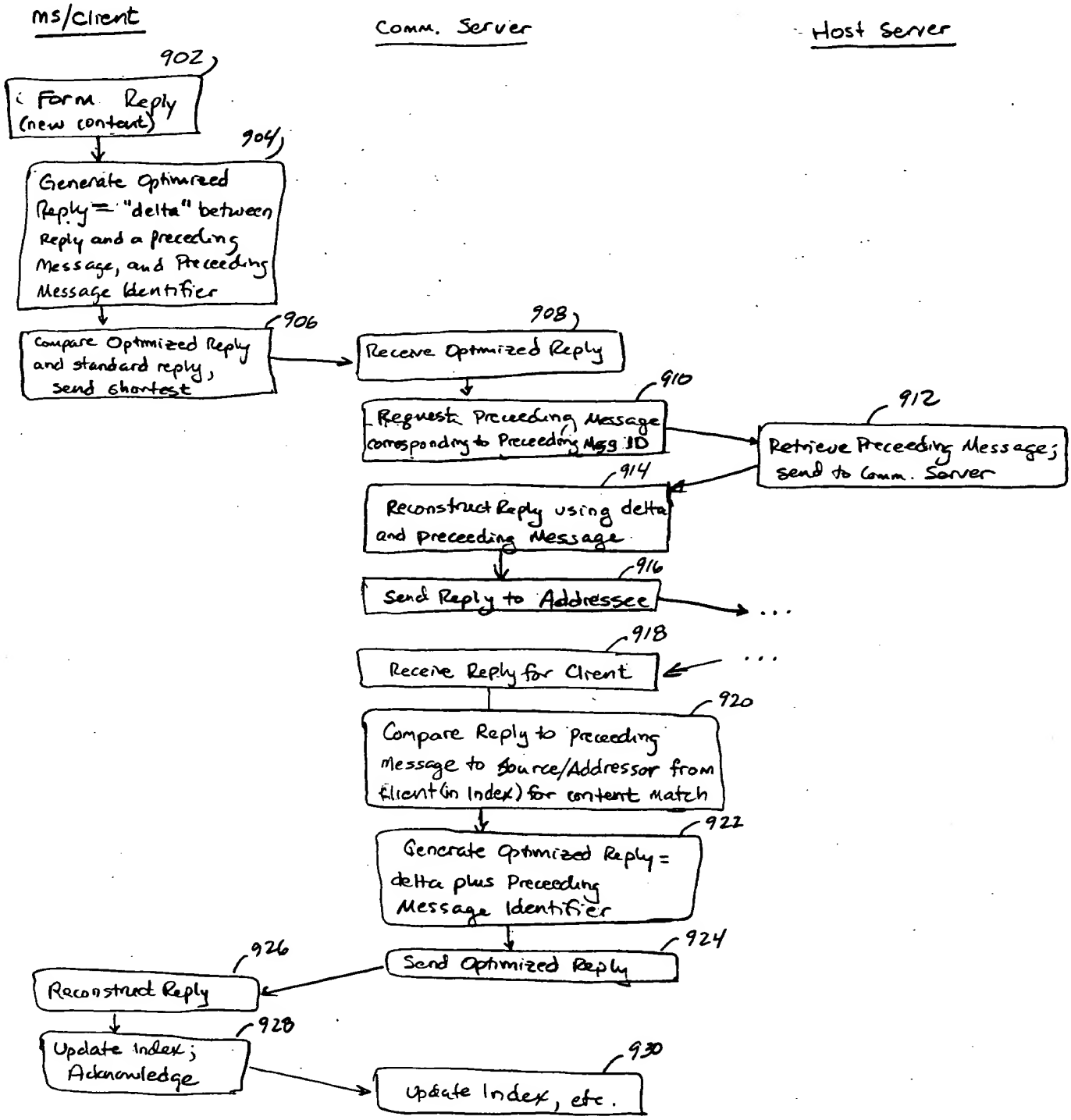
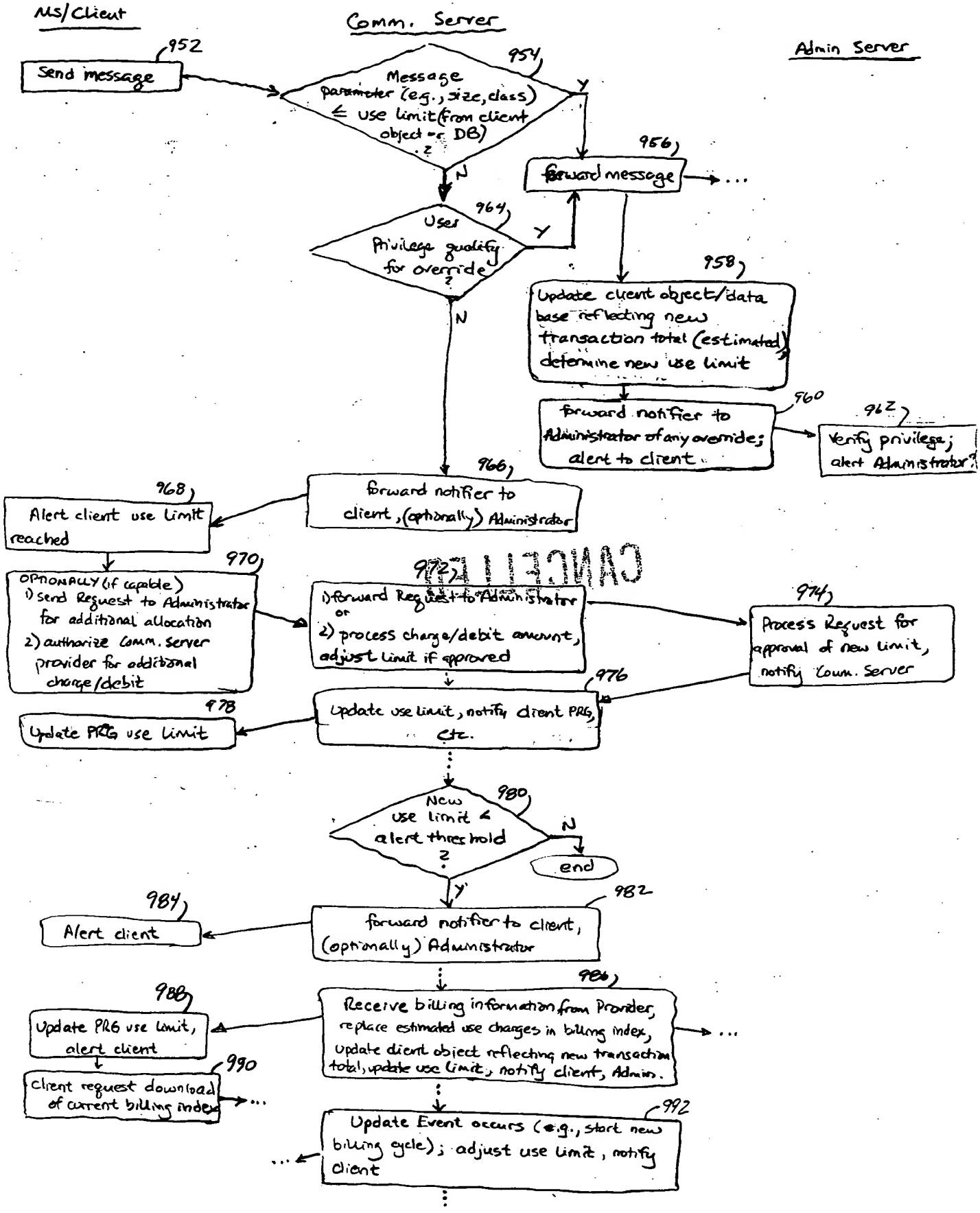

MS/Client
Comm. Server
Host Server
902
Form Reply (new content)
904
Generate Optimized Reply = "delta" between Reply and a preceding Message, and Preceeding Message Identifier
906
Compare Optmized Reply and standard reply, send shortest
908
Receive Optmized Reply
910
Request Preceeding Message corresponding to Preceeding Msg ID
912
Retrieve Preceeding Message; send to Comm. Server
914
Reconstruct Reply using delta and preceeding Message
916
Send Reply to Addressee
...
918
Receive Reply for Client
...
920
Compare Reply to preceeding message to Source/Addressor from Client (in Index) for content match
922
Generate Optmized Reply = delta plus Preceeding Message Identifier
924
Send Optmized Reply
926
Reconstruct Reply
928
Update Index; Acknowledge
930
Update Index, etc.

FIG. 10


MS/Client
Comm. Server
Admin Server
952
Send message
954
Message parameter (e.g., size, class) ≤ use limit (from client object or DB)
Y
N
956
forward message
964
User Privilege qualify for override?
Y
N
958
Update client object/data base reflecting new transaction total (estimated) determine new use limit
960
forward notifier to Administrator of any override; alert to client
962
Verify privilege; alert Administrator?
966
forward notifier to client, (optionally) Administrator
968
Alert client use limit reached
970
OPTIONALLY (if capable)
1) send Request to Administrator for additional allocation
2) authorize Comm. server provider for additional charge/debit
972
1) forward Request to Administrator
or
2) process charge/debit amount, adjust limit if approved
974
Process Request for approval of new limit, notify Comm. Server
976
Update use limit, notify client PRG, etc.
978
Update PRG use limit
980
New use limit ≤ alert threshold ?
Y
N
end
982
forward notifier to client, (optionally) Administrator
984
Alert client
986
Receive billing information from Provider, replace estimated use charges in billing index, Update client object reflecting new transaction total, update use limit, notify client, Admin.
988
Update PRG use limit, alert client
990
Client request download of current billing index
992
Update Event occurs (e.g., start new billing cycle); adjust use limit, notify client